

Appl. No. 10/044,688
Amdt. dated February 8, 2007
Reply to Office Action of May 2, 2006

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Remarks

The present amendment responds to the final Official Action dated November 9, 2006 and is filed in conjunction with the filing of an RCE. Claims 1-4, 8-11, 15, and 16 were rejected under 35 U.S.C. 103(a) based on Tiedemann U.S. Patent No. 5,588,043 ("Tiedemann") in view of Hämäläinen U.S. Patent No. 6,570,860 ("Hämäläinen") and further in view of Beach U.S. Patent Publication No. 2004/0165550 ("Beach"). Claims 5-7 and 12-14 were rejected under 35 U.S.C. 103(a) based on Tiedemann in view of Hämäläinen further in view of Padovani U.S. Patent No. 6,574,211 ("Padovani") and further in view of Fukugawa U.S. Patent No. 6,188,913 ("Fukugawa"). These grounds of rejection are addressed below. Claims 1, 8, 10, 11, and 15 have been amended to be more clear and distinct. Claims 1-16 are presently pending.

The Art Rejections

All of the rejections are based on Tiedemann, Hämäläinen, and Beach, taken in combination, or on Tiedemann, Hämäläinen, Beach, Padovani, and Fukugawa, taken in combination. As addressed in greater detail below, the cited references do not support the Official Action's reading of them and the rejections based thereupon should be reconsidered and withdrawn. Further, the Applicant does not acquiesce in the analysis of the cited references made by the Official Action and respectfully traverses the Official Action's analysis underlying its rejections.

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The Official Action rejected claims 1-4, 8-11, 15, and 16 under 35 U.S.C. 103(a) as unpatentable over Tiedemann in view of Hämäläinen and Beach. This ground of rejection is respectfully traversed.

The present invention, as claimed by claim 1, provides for a method of locating an ESL to the extent of identifying one or more CBSs and timeslots with which communication with the ESL can be conducted. Claim 1 addresses, inter alia, transmitting a find message to an ESL by a host computer. The find message is transmitted by a plurality of communication base stations utilizing every timeslot of a frame so that each communication base station repeats the find message across all timeslots of a frame in order to insure that each CBS will transmit a find message in the timeslot being used by the ESL.

Neither Tiedemann, Hämäläinen, Beach, nor any combination thereof teaches or makes obvious these limitations in the claimed combination. Tiedemann addresses the field of mobile telephony, not electronic shelf labels. Moreover, Tiedemann does not operate in the same way, and does not achieve the same results, as does the invention as claimed by claim 1.

Tiedemann, teaches systems and techniques for mobile telephone registration, based on a variety of criteria. Registration by a mobile telephone helps to identify a range of base stations within whose coverage area a mobile telephone is located, and thereby to limit the number of base stations that must page the mobile telephone in order to deliver an incoming call.

Tiedemann teaches paging of a mobile telephone, and a coverage area in which the mobile telephone is located may be identified by the response of the telephone to a page, but Tiedemann does not identify the location of a mobile telephone in the same way as the present invention, as

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claimed by claim 1, locates an ESL. For example, Tiedemann does not transmit a find request to a telephone using a plurality of base stations, each base station transmitting the request using every timeslot of a frame so that each base station repeats the request across all timeslots of a frame. Tiedemann teaches, at col. 14, line 66-col. 15, line 20, that a mobile telephone may have a mode in which it can receive a page command in any timeslot, but this does not mean that commands are repeated across every timeslot of a frame. The ability of a mobile telephone to receive a page command in any timeslot is provided in order to free a base station from the need to follow the timeslot index of the mobile telephone in order to issue a page. When the mobile telephone is not in the slotted mode, it can receive a page in any timeslot, and this ability, far from causing a page to be transmitted in every timeslot, actually eliminates any condition that might give rise to such a need. If a mobile telephone could receive a page command only in one timeslot, or in a number of timeslots encompassing less than the full range, such limitations might give rise to situations in which it might be advantageous to transmit a request in all timeslots, in order to insure that a request would be received by the telephone in the one timeslot, or one of the limited range of timeslots, in which the telephone operated. However, the mobile telephone of Tiedemann can receive a command in any timeslot. Thus, no matter what timeslot a command is transmitted in, that command will be received by the telephone when the telephone is not operating in the slotted mode. The base station therefore needs to transmit the command in only one timeslot, and will be assured that the command will be received by the mobile telephone if the telephone is within range and proper operating conditions prevail.

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It seems unlikely that a mobile telephone system base station would operate to issue a page in every timeslot, because such an operation would severely burden the operation of the system. A mobile telephone base station must communicate with many mobile telephones, and must page many telephones. For a mobile telephone base station to use every timeslot of a frame whenever it needed to page a telephone would severely tax the resources of the system.

An ESL system, by contrast, does not need to communicate with ESLs all the time. Communication typically occurs only at intervals, when an ESL needs to be updated, or when maintenance and checking of ESLs needs to be performed. Thus, it is appropriate for a number of CBSs, or even all CBSs, in a system to spend the communication resources needed to locate a missing ESL. Claim 1, as amended, therefore defines over Tiedemann.

Adding Häimäläinen does not cure the deficiencies of Tiedemann as a reference with respect to claim 1, as amended. The Official Action cites Häimäläinen as teaching an assignment of a new base station and timeslot to a mobile station, in which a mobile station receives a communication from its old base station in its old timeslot, instructing it to communicate with its new assigned base station in its new timeslot. Such a procedure cannot be combined with Tiedemann to achieve the invention as claimed by claim 1, including transmitting a find command on every timeslot of a frame. Häimäläinen uses a mobile unit's old base station to transmit a message in the mobile unit's old timeslot, instructing the mobile unit to listen for messages in the new timeslot. The invention as claimed by claim 1 broadcasts a find command to all ESLs in all timeslots, and logs the response from the ESL that is desired to be found, using information identifying the CBS through which the response was received and the timeslot

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during which the response was received, and uses this information to identify the ESL's CBS and timeslot.

Hämäläinen, on the other hand, uses already determined assignment information to instruct the mobile unit to communicate in a particular timeslot. The present invention is effective in finding an ESL and determining its communication characteristics in situations in which the handover procedure of Hämäläinen would not be available. For example, in many cases not contemplated by Hämäläinen, such as a movement of a communication device when communication was not occurring, the ESL might not be within range of the old communication base station. Transmitting, or attempting to transmit, an assignment command or any other command to an ESL from a communication base station that was not within range would be ineffective. The invention as claimed by claim 1 does not require that an assignment command be transmitted by the CBS originally communicating with the ESL, does not require that the command be transmitted in any particular timeslot, and does not require that the assignment command direct the ESL to use a previously selected timeslot.

Adding Beach to Tiedemann and Hämäläinen does not cure their deficiencies as references with respect to claim 1. Beach teaches an infrastructure for wireless communication. The Official Action cites Beach as teaching the concept that systems supporting data communications between a central computer and mobile units are necessary in applications that support a high volume of data communications from multiple users, and cites electronic shelf label systems as examples of systems advantageously using data communications facilitated by the invention of Beach. The Official Action cites Fig. 6 as showing an ESL system. However,

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Beach teaches a network infrastructure using intelligent routing in order to achieve economy of access points. It does not teach selection of timeslots for transmission to a mobile unit, or assignment of timeslots. It does not indicate why the communication techniques of Tiedemann and Hämäläinen, discussed in the context of mobile communications such as cellular communication systems, should be applied to ESL systems. Moreover, as noted above, applying the teachings of Tiedemann and Hämäläinen would not achieve the invention as claimed by claim 1. Claim 1, as amended, therefore defines over the cited art and should be allowed.

Claims 8 and 15 include similar limitations to those of claim 1 discussed above, and define over the cited art in the same way as does claim 1. Claims 8 and 15 should therefore be allowed.

The Official Action rejected claims 5-7 and 12-14 under 35 U.S.C. 103(a) as unpatentable over Tiedemann in view of Hämäläinen and Beach and further in view of Padovani and Fukugawa. Claims 5-7 are dependent claims having claim 1 as a base claim and claims 12-14 are dependent claims having claim 8 as a base claim. Because claims 1 and 8 have been shown to be allowable, claims 5-7 and 12-14 should also be allowed.

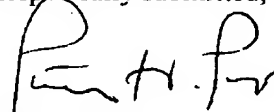
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Conclusion

All of the presently pending claims, as amended, appearing to define over the applied references, withdrawal of the present rejection and prompt allowance are requested.

Respectfully submitted,



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